EFFECTIVE ISOLATION THICKNESS OF SOME COMMON MATERIALS

Material	Density g/cm^3	Effective Isolation Thickness, In.	
		BNWL-193[1]	French[2]
Polyethylene	0.917	6.9 ± .2	
Polyethylene-Cd[3]		4.3 ± .08	
Polyethylene-Cd[4]		3.7 ± .08	
Borated Polyethylene[5]	.964	3.5 ± .08	
Compressed Wood	1.341	7.5 ± .2	
Concrete	2.33	9.8 ± .8	11.8[6]
Borated Concrete[7]	2.33	6.9 ± .2	7.87
Lead	11.34	10.2 ± .8	
Paraffin	0.90		7.87
Paraffin-Cd[8]			6.89
Borated Permali			7.09

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(1) J. D. White, C. R. Richey, Neutron Interaction Between Multiplying Media Separated by various Materials, BNWL-193, 1965. This reference used a checkerboard assembly of PuO_2 Polystyrene Cubes and Plexiglass Cubes at an overall H/Pu = 35.6 and 0.56 g Pu/cm^3 as the fissile material.

(2) P. R. Le Corche, Recent Experimental Critical Safety Data Obtained in France, Trans. Am. Nucl. Soc., 11, 687 (1968), fissile material unknown, compared critical heights of one vessel reflected by the media with common critical height of two vessels interacting through the media.

(3) 0.02 inch Cadmium between variable core and polyethylene

(4) 0.02 inch Cadmium sheets on both sides of polyethylene

(5) 10 wt.% Boron

(6) Not quite complete isolation

(7) 2.2 wt.% Boron

(8) 0.033 inch Cadmium sheets on both sides of paraffin.